

## MEDIEVAL BERBER ORTHOGRAPHY

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### Introduction

In the Middle Ages, Berber was written in the Maghribi style of the Arabic script, in what is to all appearances a standardized orthography. The earliest known examples of the medieval Berber spelling date from the middle of the 10th century A.D., while the youngest examples date from the 14th century.

Although there is some variation in the representation of a number of consonants, the orthography is remarkably consistent. In this respect it is quite unlike the early orthographies of the European vernaculars, where the same word is often written in different ways even within one line of text. This consistency implies that the Berber orthography was consciously designed, and that it was formally taught to berberophones.

It is to be noted that the highest consistency is found in the oldest manuscripts. Copies of medieval texts dating from the post-medieval period, when the old orthography had fallen into disuse, show varying degrees of corruption. This is partly due to some copyists being non-berberophones. Other copies were made by speakers of Tashelhit, which from the end of the 16th century up to the present has been written in a spelling which is fundamentally different from the medieval orthography (see on this orthography van den Boogert, 1997, chapter 3).

This article will first present a concise survey of the available sources, followed by an explanation of the rules and conventions of the orthography.<sup>1</sup> It is hoped that this will enable future editors to transcribe and interpret medieval Berber materials more accurately than has hitherto been the case.

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1. Some of the basic rules of the medieval orthography were noted by Marcy in an article (1932).

## The sources

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The sources for our knowledge of the medieval orthography are much more numerous than one might think. In fact, a number of these sources have been available in print for quite some time, although Berberologists have so far failed to exploit them. The sources can be divided into four groups:

(1) Pharmacological manuals. Almost all works on this subject that were written in the Maghrib contain a number of Berber names of plants and animals, sometimes only a handful, but in some cases more than a hundred. The following published sources were consulted for this article:

- Ibn 'Abdūn of Seville, (fl. 1100 A.D.), *'Umdat at-Ṭabīb* (ed. al-Khaṭṭābī, 1990 and 1996), contains more than 250 Berber names of plants.<sup>2</sup>
- Ibn Beklāresh of Saragossa, *al-Musta'inī* (written ca. 1000 A.D.), contains some forty Berber names. Most of these are quoted by Renaud in an article (1930) and in his annotations to the edition of the *Tuhfa*. Some names are mentioned by Dozy in his *Supplément*.
- Maimonides of Cordova (d. 601/1204), *Sharḥ Asmā' al-'Uqqār* (ed. and tr. Meyerhof, 1940), contains 27 Berber names of plants.
- 'Abdallāh ibn Ṣāliḥ al-Kutāmī (early 13th c. A.D.), commentary on Dioscurides (ed. and tr. Dietrich, 1988), contains more than 170 Berber names of plants and animals.
- Ibn al-Baiṭār of Malaga (d. 646/1248), *al-Jāmi'* (ed. Boulaq, 1874-5, tr. Leclerc, 1877-83, contains some 55 Berber names of plants and animals. These Berber materials were studied by René Basset in an article (1899); his transcriptions are generally imprecise and he presents only 41 out of 55 names.
- Ibn al-Ḥaṣṣā' (13th c. A.D.), *Kitāb Mufīd al-'Ulūm* (ed. Colin and Renaud, 1941), contains 14 Berber names.

The editions by al-Khaṭṭābī of Ibn 'Abdūn, and the Boulaq edition of Ibn al-Baiṭār are not up to modern scientific standards, but they are serviceable for our present purpose. Some important pharmacological manuals containing Berber materials remain unpublished, among them works by az-Zahrāwī (Abulcasis), as-Suwaidī and al-Idrīsī (on whom see Ullmann, 1970, pp. 149-151, 284, 278).

2. The same edition was published twice (Rabat, 1990 and Beirut, 1996), with some revisions and a different numerations of the entries.

Berber names of plants in medieval spelling are often quoted in post-medieval sources, among them:

- al-Ghassānī (second half 16th c.), *Ḥadīqat al-Azhār* (ed. al-Khaṭṭābī, 1985), 36 Berber names.
- Anonymous, *Tuhfat al-Aḥbāb* (ed. and tr. Renaud and Colin, 1934), ca 85 Berber names.
- al-Jazā'irī (fl. 1130/1717-8), *Kashf ar-Rumūz* (tr. Leclerc, 1874), ca 50 Berber names.

{p. 359} (2) Arabic works on history, geography and biography. Four of these sources were examined for this article:

- The anonymous *Kitāb al-Ansāb* (ed. and tr. Lévi-Provençal, 1928).
- The memoirs of Abū Bakr ibn 'Alī aṣ-Ṣanhājī, a close companion of Ibn Tumert, known by the nickname al-Baidhaq 'the Pawn' (ed. and tr. Lévi-Provençal, 1928).

These two texts, written in 12th and 13th centuries A.D., deal with the early history of the Almohads. They contain hundreds of personal names, tribal names and place names as well as a dozen phrases in Berber. Marcy has tried, with scant success, to transcribe and translate the phrases in an article (1932).

- al-Bakrī (d. 487/1094), *Kitāb al-Masālik wa-l-Mamālik* (ed. de Slane, 1857), contains many Berber place-names.<sup>3</sup>
- at-Tādili (d. 627/1229-30), *at-Tashawwuf*, a biographical dictionary of South-Moroccan saints of the 5th-7th centuries A.H. (ed. Faure, 1958), contains many Berber personal names.

(3) The Arabic-Berber dictionary *Kitāb al-Asmā'* compiled in the year in 540/1146 by Ibn Tunart (ابن تونارت, 478-567 A.H., 1085-1172 A.D.). This is the richest source for medieval Berber, containing more than 2,500 Berber words and phrases, including more than 250 names of plants.<sup>4</sup>

(4) The 'Leiden fragment' (Leiden ms. Or. 23.306). This is a unique fragment

3. Some of these names were studied by Chaker (1981).

4. An edition of Ibn Tunart's Berber materials is in preparation by the present author. For a brief description of this source see also van den Boogert, 1998, pp. 11-13.

consisting of one leaf from a medieval manuscript (possibly 14th c.). The leaf contains a total of sixteen lines of continuous Berber text, written in calligraphic script. The subject of the text is ethics. This fragment may be seen as the 'smoking gun': apart from its mere existence, its contents as well as its external appearance are clear evidence that a mature and well-established written tradition in Berber existed in the medieval period. An edition and full analysis of the Leiden fragment is being prepared by the present author.

In the following exposition the rules and conventions of medieval Berber spelling will be illustrated mainly with plant names taken from the above-mentioned pharmacological handbooks and from Ibn Tunart's dictionary.

Judging from the Leiden fragment, medieval Berber texts appear to have been written with full vocalization. In most of the other sources, Berber words are fully or partially unvocalized. The examples below will be quoted without vocalization. In cases where it is necessary to know the full vocalization, a transliteration will be given between square brackets.

### Word-internal vowels

Medieval Berber orthography distinguishes four vowels: *a*, *i*, *u* and *e* (*schwa*). In word-internal position, the vowels *a*, *i* and *u* are written with the *hurūf al-madd*: *alif* represents *a*, *yā'* represents *i* and *wāw* represents *u*.<sup>5</sup>

{p. 360}	تاسافت	<i>tasafɛ</i>	'oak'
	تيزنيرت	<i>tiznirt</i>	'fan palm'
	تولوليت	<i>tululit</i>	'caper'

In unvocalized script, the central vowel *e* (*schwa*) is not represented in word-internal position. *Schwa* may also occur in open syllables:

تامماشت	<i>tammašt</i>	'tamarisk'
تاسلت	<i>tasselt</i>	'laurel'
يلودی	<i>yeludi</i>	'Ranunculus sp.'

5. An alphabetical list of quoted forms with references is appended at the end of this article.

In fully vocalized script, *schwa* is most frequently written with *fatha*. In some sources it is written with *kasra*.

### Word-initial vowels

In the *Kitāb al-Ansāb* and in the memoirs of al-Baidhaq, initial *i-* and *u-* are regularly written with *alif-madda* followed by *yā'* and *wāw*. Initial *a-* is written with *alif-madda* preceded by a high 'chairless' *hamza*:<sup>6</sup>

آیت ورسانن	<i>Ayet Wersanen</i>
آیفشتالن	<i>Ifeštalen</i>
آوغزافن	<i>Uγzafen</i>

The other sources contain only one example of an initial vowel other than *a-* written with *alif-madda* (Tuhfa no 17):

آوداد	<i>udad</i>	'Barbary sheep'
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This use of *madda* to indicate the presence of a word-initial vowel, *a-* as well as *i-* and *u-*, is typical of medieval Berber orthography. It is clearly a divergence from contemporary Arabic usage.<sup>7</sup>

In fully or partially vocalized forms in Ibn Tunart's *Kitāb al-Asmā'*, initial *a-* is written either with *alif-madda*, or with *alif-madda* with preceding low chair-less *hamza*, or with *alif* with preceding *hamza*:

آمکراز	<i>amekraz</i>	'plowman'
آآدرار	<i>adrar</i>	'Chinese lantern'
آاغاز	<i>aγaz</i>	'fruit of the fan palm'

These spellings of initial *a-* are also occasionally found in the other sources, especially *alif-madda*.

6. Lévi-Provençal has made several changes in the spelling of the Berber materials in the printed edition. The following exposé is based on an examination of the photographic plates added to the edition (esp. plate III).

7. On the use of *madda* in Maghribi-Arabic spelling see van den Boogert, 1989, p. 33.

{p. 361} In vocalized forms, Ibn Tunart writes initial *i-* with *alif* with subscript *hamza*, followed by *yā'*:

إيردن *irden* 'wheat'

Initial *u-* is written with *alif* with *hamza* written through its middle (reproduced here with superscript *hamza* for typographical reasons), followed by *wāw*:

أوماد *ummad* 'diss grass'

Word-initial *schwa* is represented by *alif* (with superscript *fatha* in vocalized text):

افسوا	<i>efsu</i>	'card (wool)!'
انس	<i>ennes</i>	'of him'
وار الاغ	<i>war ellay</i>	'dodder' <sup>8</sup>

In the other sources, Berber words are usually left unvocalized. When a word is written without vocalization, word-initial *a-* is written with *alif* and word-initial *i-* and *u-* are written with *alif* followed by the appropriate *ḥarf al-madd*:

ادمام	<i>admam</i>	'medlar'
ايغري	<i>iyrey</i>	'asphodel'
اوكان	<i>ukkan</i>	' <i>Caralluma europea</i> '

Note that in the absence of vocalization, word-initial *alif-wāw* may represent either *u-* or *aw-* and *alif-yā'* may represent either *i-* or *ay-*:

اوماد	<i>ummad</i>	'diss grass'
اوسرغينت	<i>awserγint</i>	' <i>Corrigiola telephiifolia</i> '
ايزري	<i>izrey</i>	'wormwood'

8. Also written as one word *وارلاغ warellay*. Etymologically *war* 'he who has not' and *\*allay* 'stalk, stem' (cf. Touareg *allay* 'javelin', *tallaq* 'wooden shaft of a lance'?). The epiphytic dodder (*Cuscuta epithymum*) indeed has no rooted stem, cf. also its name in Tashelhit, *azzar n tmγarin* 'women's hair'.

ايرنى *ayerni* 'friar's cowl'

On some examples in the work of Ibn al-Baiṭār of a divergent way of spelling word-initial vowels see below.

In order to present as clear a picture as possible, in the examples quoted below word-initial vowels will be written with simple *alif*, without *hamza* and/or *madda*, irrespective of the spelling found in the source.

### Word-final vowels

Word-final *-a* is regularly written with *alif*. It is occasionally written with *alif maqṣūra* or with *hā'*:

{p. 362}	تايدا	<i>tayda</i>	'pine'
	تورزی	<i>turza</i>	'apple of Sodom'
	تاسليغوه	<i>tasliḡwa</i>	'carob'

Word-final *-i* is written with *yā'*, usually without its diacritical dots:

اسليلی	<i>asili</i>	'dill'
تیبی	<i>tibi</i>	'mallow'

Word-final *wāw*, representing either the vowel *-u* or the consonant *-w*, is often followed by an *alif*. This *alif* is a purely graphical device, and does not represent a vowel:

وايللوا	<i>waytella</i>	'henbane'
خيزوا	<i>xizzu</i>	'carrots'
افرسیوا	<i>afersi</i>	'fern'
تيلفاوا	<i>tilfaw</i>	'lupin'

In the modern standard orthography of Arabic this so-called *alif al-wiqāya* 'prophylactic *alif*' is written with plural verbal forms only. In the spelling of the Koran it is used more widely, e.g. II 269 اولوا الالباب *ālā 'l-albābi*, XIII 39 الله يحوا

yamhū 'Llāhu.

### The consonants

The representation of the following consonants poses no problems:

ب	<i>b</i>	ایاون	<i>ibawen</i>	'beans'
ت	<i>t</i>	تیبتاست	<i>tibitast</i>	'beet'
خ	<i>x</i>	تیزخت	<i>tizext</i>	'willow'
د	<i>d</i>	امراد	<i>amrad</i>	'acacia'
ر	<i>r</i>	ارماس	<i>armas</i>	'orache'
ز	<i>z</i>	ازنزا	<i>azenzu</i>	'clematis'
س	<i>s</i>	اساسنوا	<i>asasnu</i>	'strawberry tree'
ش	<i>š</i>	تاشنتیت	<i>tašentit</i>	'rye'
غ	<i>γ</i>	تاغیغیت	<i>ta-γey-γeyt</i>	'soapwort'
ف	<i>f</i>	تیفاف	<i>tifaf</i>	'chicory'
ک	<i>k</i>	ایکیکر	<i>ikiker</i>	'chick peas'
ل	<i>l</i>	الیلی	<i>alili</i>	'oleander'
م	<i>m</i>	ادمام	<i>admam</i>	'medlar'
ن	<i>n</i>	انلی	<i>anli</i>	'sorghum'
ه	<i>h</i>	ترهلا	<i>terrehla</i>	'agrimony'
و	<i>w</i>	وامسا	<i>wamsa</i>	'fennel'
ی	<i>y</i>	تاریال	<i>taryal</i>	'mandrake'

{p. 363} The spelling of the consonants *ḏ*, *z*, *g* and *ž* is more complicated. Before looking at how these consonants are written, it is useful to take a brief look at the way in which a borrowed script is adjusted to represent consonants that are not present in the language for which the script was originally designed. An almost universally applied method of adaptation is to write a consonant for which the borrowed script has no separate letter with the letter that represents its nearest equivalent in the perception of the native speaker. This is usually its voiced or voiceless counterpart. For example, in early Persian orthography, the consonant *g* was written with the letter *kāf*, which also represented Persian *k*. In the same manner, the Persian consonant *č* was written with the letter *čīm*, which also repres-



ented Persian *g*.<sup>9</sup> This method was also applied in the representation of Berber consonants for which the Arabic script has no separate letter.

Thus, the consonant *q* is written with *tā'* (voiceless counterpart):

انلكوط	<i>anelkuḍ</i>	'borage'
تيكيطا	<i>tikiḍa</i>	'carobs'

Note that at the time when the Berber orthography was devised, the letter ض, which in modern transcription systems is usually transcribed as *ḍ*, probably did not represent a dental stop *ḍ* but rather an interdental or lateral fricative. In any case, Arabic *t* was apparently perceived as the nearest equivalent to Berber *q* and hence the letter *tā'* was chosen to represent *q*. Note also that Arabic *t* is replaced with *q* in loanwords, e.g. Arabic *ṭabīb* 'doctor' becomes *aḍbib* in Berber. It is also possible, though not probable, that medieval Berber had *t* instead of *q* (voiceless *t* is still found in some dialects, e.g. in Jabal Nafūsa and the Middle Atlas).

The letter *tā'* also represents *t* (tense counterpart of *q*):

اكتوم	<i>agetṭum</i>	'twig'
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The consonant *z* is written either with *zāy* (non-pharyngealized counterpart) or with *ṣād* (voiceless counterpart):

تاferenzit	<i>taferzizt</i>	'colocynth'
اصوكا	<i>azuka</i>	'thuya'

The sources contain an explicit statement that the letter *ṣād* represents *z*: Ibn al-Ḥaṣṣā' mentions the name *الصاص* *alezṣaz* 'Daphne gnidium' and indicates its pronunciation by adding the phrase *bayn aṣ-ṣād wa-z-zāy*, 'between *ṣ* and *z*', i.e. a consonant which is pharyngealized like *ṣ* and voiced like *z*.<sup>10</sup>

9. At a later stage, the two values of each letter were differentiated by forming the separate letters *čim* and *gāf* by means of the addition of three diacritical points to *gim* and *kāf*.

10. Ibn al-Ḥaṣṣā', ed. Colin & Renaud, 1941, no 600.

Ibn Tunart consistently uses *ṣād* to write *z*. In the other sources there seems to be free variation between *zāy* and *ṣād*.

In a few rare cases, the letter *ṣād* represents *ṣ*:

تبيّنصرت	<i>tibinṣert</i>	'marsh mallow'
اصغر	<i>aṣyer</i>	'wood, bush'

In the case of the well-attested plant name *tibinṣert*, the *ṣ* can be explained etymologically, as this name appears to be a contraction of *تبيي ان مصر* *tibi en Meṣer* 'mallow of Egypt' (original form mentioned by Ibn Tunart). In the case of *aṣyer*, the spelling represents the form [aṣyer] (the emphatic *r* is never distinguished from *r* in the spelling) which is a variant of *اسغر* *aṣyer* (also attested).

The consonant *g* is written either with *ḡīm*, *kāf* or *qāf*:

ايدجل	<i>idgel</i>	'cedar'
انكارف	<i>angaref</i>	'chaste tree'
امزقور	<i>amezgur</i>	'sorghum'

One plant name is found in the sources with all three spellings:

ارجان	<i>argan</i>	'argan'
اركان	<i>id.</i>	'id.'
ارقان	<i>id.</i>	'id.'

Note that the name *argan* denotes a tree (*Argania spinosa*) which does not grow in berberophone areas where original *g* can become *ḡ*.<sup>11</sup> It is therefore certain that *ḡīm* represents *g*, as the form *\*arḡan* does not exist.

That *ḡīm* represented *g* can also be deduced from the spelling of some Arabic nisbas. For instance, members of the Tashelhit-speaking High Atlas tribe whose modern name is *Igdmīwn* use the nisba *الجدميوي* *al-Jadmīwi*,<sup>12</sup> which is derived

11. On *g > ḡ* see Kossmann, 1995.

12. The alternative spelling *الكدميوي* *al-Kadmīwi* is also found.

from the medieval Berber spelling ايجدميئون *Igedmiwen*.

The letter *qāf* also represents *qq* (tense counterpart of *γ*):

ازقور	<i>azeqqur</i>	'tree-trunk'
تيقي	<i>tiqqi</i>	'juniper'

In most sources the choice between *ġl̄m* or *kāf* for *g* appears to be free. *Qāf* is consistently used by Ibn 'Abdūn, but it is rare in the other sources. It is probable that the variation between *ġl̄m* and *kāf* is the result of historical developments (see below).

The consonant *ž* is written with *ġl̄m* or *šl̄n*:

اناشل	<i>anažel</i>	'bramble'
تونجيفين	<i>tunžifin</i>	'pearl barley'

{p. 265} Ibn 'Abdūn of Seville, who mentions the name ايش *ižž* 'terebinth' (a Zenatic form), precisely indicates the pronunciation of *šl̄n* by adding the phrase *bayn aš-šl̄n wa-z-zāy*, 'between *š* and *z*', i.e. a consonant which is palatal like *š* and voiced like *z* (ed. al-Khaṭṭābī, 1996, no 1584).

Note that *ġġ* is always written with *ġl̄m*:

ازجيج	<i>azeġġig</i>	'flower'
تازجاشت	<i>tazeġġašt</i>	'convalescence'

The variation found in the representation of *g* and *ž* is probably the result of phonological changes that took place in the spoken Arabic of the Maghrib. It is possible to distinguish two basic stages in the development of the Berber orthography, as set out in the table below.

	Stage 1		Stage 2	
letter	Arabic	Berber	Arabic	Berber
ج	g or ġ	g	ġ or ž	ž
ش	š	š + ž	š	š
ك	k	k	k	k + g

At stage 1, the letter *ġm* was chosen to represent Berber *g*. At this time, *ġm* must have represented Arabic *g*, or perhaps *ġ*. We have no knowledge of any variety of Arabic spoken in the Maghrib that has or had *g* or *ġ* corresponding to *ġm*. An indication that such a dialect may once have existed is perhaps found in the Berber loanword *timezgida* 'mosque', which corresponds to an Arabic form *\*mesgida* or *\*mesġida* rather than the attested *mezġid* or *mesġid* (standard *masġid*).<sup>13</sup> In addition, Ibn Tunart mentions a form ايتكارن *iteggaren* 'traders', cf. Arabic *tažer* (standard *tāġir*) 'trader'.

At stage 1, the letter *ġm* could not be used for Berber *ž*, so that *šm* (voiceless counterpart) was chosen instead.

At stage 2, Arabic *g* had changed to *ġ* or to *ž*, so that *ġm* became available to write Berber *ž*. Berber *g* was then written with *kāf* (voiceless counterpart).

The Leiden fragment is the only source which consistently uses *kāf* for *g*, and which can thus be taken as representing stage 2. No source is available at present which represents stage 1. All other sources seem to represent an intermediate, transitional stage in the development of Berber orthography:

{p. 366} *Intermediate stage*

letter	Arabic	Berber
ج	ġ or ž	ž + g
ش	š	š + ž
ك	k	k + g

13. Cf. also Spanish *mezquita*.

The most illuminating example of this intermediate stage is provided by the *Kitāb al-Anṣāb*, in which *g* is written with *gīm* or *kāf* and in a few cases with *gīm* with a small superscript *kāf*. In the printed edition, Lévi-Provençal has more or less systematically substituted *kāf* with three superscript dots (a post-medieval innovation) for *gīm* or *kāf* representing *g*. The original spelling with *gīm* + superscript *kāf* can be seen in the facsimiles, cf. plate II, line 1, *Abū Wzreg* and plate IV, line 13, *Guzūla*.<sup>14</sup>

The retention of *gīm* to write *g*, and of *šin* to write *ž*, long after Arabic *g/ğ* had changed to *ğ/ž*, is the result of the inertia that is characteristic of an established orthography.

### Labialization

The labialization of velar consonants is indicated in vocalized script with the vowel sign *ḍamma*, which may be written either on the letter representing the velar itself or on the preceding letter:

تالقیت	[tāluqqīt]	<i>talegg"it</i>	'white broom'
اکثار	[ākūṭār]	<i>ak"tar</i>	'yarrow' <sup>15</sup>
تاغندست	[tāγundast]	<i>taγ"endest</i>	'pellitory'
يدختن	[yadduxtan]	<i>yeddex"ten</i>	'mistletoe' <sup>16</sup>

### Ibn al-Baiṭār's spelling of vowels

A divergent system to represent word-initial *a-* in Berber plant names is encountered in the initial entries in Ibn al-Baiṭār's *Jāmi'*. This system is also found in other sources, but only for initial *a-* in the Arabic transcription of Greek plant names.

14. Berber *اوگوزولن Uguzulen*, modern Tashelhit *Ig"zulen*: name of a tribal federation of the Anti-Atlas, 'Gzoula' in the French orthography.

15. The noun *ak"tar*, mentioned by al-Kutāmī and Ibn al-Baiṭār, contains what is perhaps the earliest attested example of spirantization. Ibn al-Baiṭār quotes Abū al-'Abbās an-Nabāṭī saying that this plant is 'well-known in the eastern part of the 'Udwa' (*ma'rūf bi-šarq bilād al-'udwa*).

16. Etymologically *yeddeγ* 'he sticks (to)' (3sgm) + *ten* 'them' (3plm): the sticky seeds of mistletoe cling to the branches of trees where they germinate.

Ibn al-Baiṭār's entries nos 2-6 are all Berber plant names. The initial vowel *a-* is written with *alif-madda*, followed by a second *alif*:

آاطريلال	<i>aḍereylal</i>	'false bishop's weed'
آاكتار	<i>ak<sup>u</sup>tar</i>	'yarrow'
آارغيس	<i>arγis</i>	'barberry'
آامليلس	<i>ameliles</i>	'buckthorn'
آاقشروا	<i>agešru</i>	(unidentified)

{p. 367} The same spelling is used in entry no 1, which is a Greek name:<sup>17</sup>

آالسن	<i>ālusan</i>	'alyssum', Gr. αλυσσον
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The logic behind this convention is that in this way all initial vowels are written with *alif* followed by the appropriate *ḥarf al-madd*, i.e. *alif-wāw* for *u-*, *alif-yā'* for *i-* and *alif-alif* for *a-*.

Beginning with entry no 7 (Arabic *abhal* 'savin'), Ibn al-Baiṭār has abandoned this cumbersome spelling of initial *a-*. In the remaining part of his work, initial *a-* is written with single *alif* in Berber as well as in Arabic and Greek names. The other Berber names with initial *a-* presented as main entries in the *bāb al-alif* are:

اداد	<i>addad</i>	'atractylis'
ادرييس	<i>aderyis</i>	'thapsia'
ارجان	<i>argan</i>	'argan'
ازرود	<i>azrud</i>	'melilot'

Another practice which Ibn al-Baiṭār quickly abandoned is the explicit description of the vocalization of a name. This is found in his first five entries, and sporadically in the rest of the book. From these explicit vocalizations it appears that Ibn al-Baiṭār used *kasra* instead of *fatha* to represent *schwa* (explicit vocalization between square brackets):

17. Fifteen examples of initial double *alif* representing *a-* in Greek names are found in Dietrich's *Dioscurides triumphans* (see index to the Arabic text).

آاطريلال	[āṭiriylāl]	<i>aḍereylal</i>
آاكار	[ākuṭār]	<i>akṭar</i>
آارغيس	[ārḡiys]	<i>arḡis</i>
آامليلس	[āmiliylis]	<i>ameliles</i>

In the older spelling of Arabic, the *hurūf al-madd* representing the long vowels *ī* and *ū* could be written with or without *sukūn*.<sup>18</sup> Thus, in the spelling of Berber *arḡis*, the vowel *ī* is explicitly written with *ḡayn maksūra* and *yā' sākina*, i.e. *ḡayn* with *kasra* and *yā'* with *sukūn*.<sup>19</sup> However, since Ibn al-Baiṭār uses *kasra* to represent *schwa*, this spelling may also represent Berber *-ey-*, as in *aḍereylal*, explicitly written with *rā' maksūra* and *yā' sākina*.

### Arabic loans

Arabic loanwords in medieval Berber largely retain their original spelling. They are borrowed with the Arabic definite article, which is semantically 'neutralized'. *Tā' marbūṭa* is usually replaced with *tā'*:

{p. 368}	الترنج	<i>etterenḡ</i> <sup>20</sup>	'citron', Ar. <i>at-turunḡ</i>
	اليمون	<i>elmeymun</i>	'bryony', Ar. <i>al-maymān</i>
	الفصت	<i>elfeṣṣet</i>	'lucerne', Ar. <i>al-fiṣṣa(t)</i>

In some cases the spelling is changed to reflect Berber pronunciation:

الدونيت	<i>edduneyt</i>	'world', Ar. <i>ad-dunyā</i>
الشييت	<i>eṣṣiṣeyt</i>	'bonnet', Ar. <i>aṣ-ṣāṣiya(t)</i>

### Notes on phonology and morphology

No full survey of Medieval Berber grammar will be attempted here; only some of

18. In modern standard orthography, the *hurūf al-madd* are always written without *sukūn*.

19. In the spelling of entry no 5, *ameliles*, Ibn al-Baiṭār does not indicate whether the *yā'* has *sukūn*. He simply states *al-nūn wa-l-lāmān minhu maksūra wa-s-sīn muḥmala*, 'the *nūn* and the two *lāms* have *kasra*, the *sīn* is without diacritical points.'

20. Explicitly Berber, explicitly vocalized *bi-faṭḥ at-tā' wa-r-rā'*.

the more salient features will be pointed out.

- (1) The vowel *a* is sometimes (though not regularly) reduced to *e* before the consonant *r*, e.g.:<sup>21</sup>

	medieval	Tashelhit
تازرت	<i>tazert</i>	<i>tazart</i> 'figs'
أسغر	<i>asγer</i>	<i>asγar</i> 'wood, bush'
تامرت	<i>tamert</i>	<i>tamart</i> 'beard'

- (2) Plurals with nominal prefixes *u-* and *tu-* occur frequently where corresponding forms in the modern Berber languages have *i-* and *ti-*:<sup>22</sup>

	medieval	Tashelhit
اوكرمودن	<i>ukermuden</i>	<i>ikrmudn</i> 'leguminous plants'
توروفين	<i>turufin</i>	<i>tirufin</i> 'roasted barley'

Tashelhit is in fact the only Berber language for which comparable forms are attested, e.g. *tumzin* 'barley', *tumγarin* 'women' (*timzin*, *timγarin* in other languages).

- (3) The forms of the *état d'annexion* of masculine nouns are as follows:

اجليد	<i>agellid</i>	'king'	<i>état libre</i>
وجلید	<i>wegellid</i>		<i>état d'annexion</i>
اصروا	<i>aγru</i>	'stone'	<i>é.l.</i>
وصروا	<i>wεγru</i>		<i>é.a.</i>
امان	<i>aman</i>	'water'	<i>é.l.</i>

21. All three forms are attested in more than one source; it is unlikely that they are misspellings or corruptions.

22. Cf. also the ethnonyms *Uguzulen* and *Uγzafen* mentioned above.



وامان	waman		é.a.
ايغف	iγef	'head'	é.l.
يغف	yeγef		é.a.
ايكران	igran	'fields'	é.l.
يكران	yegran		é.a.
ايلل	ilel	'sea'	é.l.
ييلل	yilel		é.a.
اوشن	uššen	'jackal'	é.l.
ووشن	wuššen		é.a.

The construct states with *we-* and *ye-* have consistently been transcribed incorrectly in the past, viz. with initial vowels *i-* or *u-* (e.g. \**ugellid* instead of *wegellid*). The letters *yā'* and *wāw* in word-initial position always represent the consonants *y-* and *w-*. The vowels *i-* and *u-* in word-initial position can only be written with *alif* followed by *yā'* c.q. *wāw*.

(4) The *état d'annexion* is found, among others, in possessive constructions:

تونين ان وجليد	tunin en wegellid	'wells of the king'
تيسنت ان وصروا	tisent en wezru	'salt of stone'
ايديد ان وامان	ayeddid en waman	'sack of water'
انكاص ان يغف	angaz en yeγef	'pain of the head'
تووظفا ان يكران	tuwedfa en yegran	'possession of fields'
اطوا ان ييلل	aḍu en yilel	'wind of the sea'
اطيل ان ووشن	aḍil en wuššen	'grape of the jackal'

Other examples include:

ايكران وسنان	iger en wesennan	'field of thorns'
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ایمی ان تگمی	<i>imi en tegemmi</i>	'entrance of the house'
تابزوغت ان تیلی	<i>tabezzugt en tili</i>	'ear of the ewe'
تاغزوت ان والوط	<i>taγzūt en waluḍ</i>	'valley of mud'
تامارت ان تاغاط	<i>tamart en taγaṭṭ</i>	'beard of the goat'
تارقا ان وودی	<i>targa en wudi</i>	'canal of butter'
تیبی ان وامان	<i>tibi en waman</i>	'mallow of the water'
تیلت ان ینرفط	<i>tilett en yenerfed</i>	'herb of the spleen'

In many possessive constructions, the preposition *en* 'of' is omitted, while the possessor remains in the *état d'annexion*:

امان یسیدان	<i>aman yesidan</i>	'water of ostriches'
{p. 370} اسغر یغجد	<i>aşyer ye-yežd</i>	'shrub of the kid'
اصغر یفیغر	<i>aşyer yefiγer</i>	'shrub of the serpent'
تاغروت ووشن	<i>taγrut wuššen</i>	'knife of the jackal'
تامرت ومسون	<i>tamert Wemsun</i>	'beard of Amsoun' <sup>23</sup>
تیلت تفیغرا	<i>tilett tefiγra</i>	'herb of the serpent'

The elimination of the nominal prefix leads one step further toward compound nouns:

اڨار ایلال	<i>aḍar eylal</i>	'false bishop's weed' <sup>24</sup>
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The same name is also attested as a full compound *aḍereylal* (Ibn al-Baiṭār, cf. above), with *a* reduced to *e* before *r*.

Some examples of compounds are:

اڨومازیر	<i>aḍumazir</i>	'figwort' <sup>25</sup>
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23. Amsoun or Msoun is the name of a valley located north-west of Taza where the plant which bears this name (a variety of dodder) is said to grow.

24. Litt. 'bird's foot', *aḍar* 'foot' and *aylal* 'bird'.

25. Litt. 'smell-of-dung': *aḍu* 'odour' and *amazir* 'dung'.

اسغرسيف *asyersif* 'willow'<sup>26</sup>

(5) In personal names, Arabic (*abū* 'father of, he who has' and *ibn* 'son of' may be followed by a Berber noun in the *état d'annexion*:

بو وغيول *Bū Weyyul* 'he with the donkey'  
 ابو ينيكف *Abū Yenikef* 'father of Hedgehog'

بن ولون *ibn Welwun* 'son of Ram'<sup>27</sup>  
 بن ومغار *ibn Wemyar* 'son of the Chief'

Arabic *ibn* is also used in the sense 'native of':

بن وجادير *ibn Wegadir* 'native of Agadir'  
 بن وندلوس *ibn Wendelus* 'native of (al-)Andalus'

### Concluding remarks

An important question which has not been addressed thus far is: Which variety of Berber is, or which varieties are recorded in the medieval sources? Some brief remarks may be made here.

The more substantial sources record a variety of Berber which is most closely related to modern Tashelhit, as appears from a comparison of lexicon and morphology.<sup>28</sup> These sources are: Ibn Tunart's *Kitāb al-Asmā'*, the Leiden Fragment, the *Kitāb al-Ansāb* and the memoirs of al-Baidhaq. These sources also share some special features (e.g. reduction of *a* to *e* before *r*, *schwa* in open syllables, plurals with prefixes *u-*, *tu-*) which show that they all record the same variety of Berber. 'Old Tashelhit' may be an appropriate name for this language.

The most striking fact concerning the pharmacological manuals is that the {p. 371} majority of them were written in al-Andalus (az-Zahrāwī, Ibn Beklāresh, Ibn 'Abdūn), or by writers of Andalusian birth working in the Middle East (Maimo-

26. Litt. 'river tree': *asyer* 'bush, tree' and *asif* 'river'.

27. Cf. Ibn Tunart الوون *alwun* 'ram' (Arabic *kabī*).

28. This point is elaborated in van den Boogert, 1998, p. 12.

nides, Ibn al-Baiṭār). It is likely that a substantial body of speakers of a variety of Berber akin to Tashelhit lived in al-Andalus, and that al-Andalus is the place where this language was first committed to writing.<sup>29</sup> That there were indeed Berbers in Spain who spoke a Tashelhit-like language is shown by the fact that at the end of the 15th century, as a consequence of the *reconquista*, a group or groups of berberophones are known to have migrated from Spain to the Sous in southern Morocco, where they became known as the 'people of the ship' (*ayt u-yrrabu*). One of them is Sa'īd al-Kurrāmī (Seid Ak'rramu, d. 882/1477-8), who is reputed to be the last surviving Berber scholar who had received his schooling in Granada.<sup>30</sup> The Andalusian Arabic loanwords which are still found in Tashelhit, such as *lmri* 'mirror', *lkiyd* 'paper', *lixt* 'hereafter', *ššīšit* 'bonnet', etc., also point to a connection between Tashelhit and al-Andalus.<sup>31</sup>

It is noteworthy that in the *Kitāb al-Ansāb* and the memoirs of al-Baidhaq, who was certainly born in the South of Morocco, the Berber phrases are repeatedly said to be 'in the language of the Gharb' (*lisān al-ḡarb*). The coastal area in Morocco which is known as 'the West' (*al-ḡarb*) is now inhabited by arabophones. The berberophone Ghomara, in northern Morocco, may be an isolated remnant of the original Berber language spoken in this area.<sup>32</sup>

The botanist 'Abdallāh ibn Šāliḥ al-Kutāmī belonged to the Kutāma or Ik'tamen tribe. Members of this tribe had settled in various parts of North-Africa and al-Andalus.<sup>33</sup> Al-Kutāmī had a druggist's shop in Marrakech. He was one of the teachers of Ibn al-Baiṭār (cf. Ullmann, 1970, p. 279).

Ibn al-Ḥaššā' may have spoken a Tashelhit-like Berber language, as he worked in the service of the first sultan of the Ḥafṣid dynasty of Tunisia (cf. Ullmann, 1970, p. 236). The Ḥafṣids were the descendants of Abū Ḥafṣ 'Umar (a.k.a. 'Umar Inti, d. 571/1176), a Berber of the South Moroccan Hantāta tribe and one of the close companions of Ibn Tumert.

29. On Berbers in al-Andalus in general see de Felipe, 1993 and 1997.

30. Cf. Justinard, 1933, pp. 220-224.

31. Standard Arabic *a* often changed to *ī* in Andalusian colloquial Arabic; compare the standard forms *al-mir'ā(t)*, *al-kāyid*, *al-'āxira(t)*, *aš-šāšiya(t)*. Pedro de Alcalá actually mentions the forms *mirt* 'mirror' and *xixa* 'bonnet'. See also van den Boogert, 1998, p. 195.

32. The present-day Ghomara claim that they are related to the Chleuh, the speakers of Tashelhit (cf. Colin, 1929).

33. See *EP*, 'Kutāma'.

The gradual expulsion of the Muslims from Spain in the course of the 15th century probably put an end to Old Tashelhit as a written language. A century or so later, (pre-)modern Tashelhit emerged as a literary language, in the garb of a different, newly devised orthography.<sup>34</sup>

There are also medieval sources which record a variety of Berber which is clearly not closely related to Tashelhit. In fact, the oldest examples of Berber in Arabic script known to the present author are the plant names which are found in the *Kitāb al-I'timād*, a pharmacological manual compiled in the second half of the 10th c. A.D. by Ibn al-Jazzār (d. 369/980 or 395/1004). The names are:

	تيكירותان	<i>tigirutan</i>	'dittany'
{p. 372}	التشتيوان	(at-) <i>teštiwan</i>	'polypody'
	التاكندست	(at-) <i>tag"endest</i>	'pellitory'
	التاكوت	(at-) <i>takkewt</i>	'Euphorbia resinifera'
	التانغوت	(at-) <i>taneγut</i>	'Euphorbia pithyusa'
	التانغيت	(at-) <i>taneγit</i>	'id.'
	التافروت	(at-) <i>tafrut</i>	'iris'

All of these names except one are written with the Arabic definite article. Note the plural ending *-an* with feminine nouns, which is only attested in the language of the Ghomara.<sup>35</sup> Ibn al-Jazzār lived and worked in Kairouan in Tunisia; of his ethnic background nothing is known.

The use at this early date of the letter *kāf* to represent the Berber consonant *g* in *tigirutan* may be an indication that stage 1 in the development of the Berber orthography is to be dated to even earlier time, possibly in the 9th or even 8th century A.D.

Among the sources that were not examined for this article there are some in which eastern varieties of Berber are recorded. These include the Berber passages in

34. The oldest preserved text in the 'new' orthography is the *'Aqā'id ad-Dīn* by Ibrāhīm ibn 'Abdallāh aṣ-Ṣanhājī (a.k.a. Brahim Aṣnag, d. 1005/1597). See van den Boogert, 1997, chapter 5.

35. Cf. also the name of Tétouan, litt. 'the wells' (*Tiṭṭawīn* تيطاوين in the memoirs of al-Baidhaq).

Ibadite scriptures (cf. Lewicki, 1934 and Ould-Braham, 1988), the 'manuscript of Zuwāra' (cf. Motylinski, 1907) and the abundant onomastic materials in the works of Ibn Khaldūn. These eastern materials are written in an orthography which is clearly based on the same principles as the orthography of the far West. Further study of the available materials will be necessary before we can determine where and when the medieval Berber orthography originated.

## Alphabetical list of quoted medieval Berber forms

{p. 372-4}

Only the reference to the source from which a particular form is quoted in this list. Many of the plant names are found in more than one source. The letter  $\gamma$  is placed after  $g$  in the alphabetical order.

Abdun	Ibn 'Abdūn, <i>'Umdat al-Ṭabīb</i> , ed. al-Khaṭṭābī, 1996 (Beirut)
Ansab	Anon., <i>Kitāb al-Ansāb</i> , ed. Lévi-Provençal, 1928
Bakri	al-Bakrī, <i>Kitāb al-Mamālik wa-l-Masālik</i> , ed. de Slane, 1857
Baidhaq	al-Baidhaq, memoirs, ed. Lévi-Provençal, 1928
Baitar	Ibn al-Baitār, <i>al-Jāmi'</i> , tr. Leclerc, 1877-1883
Hassha	Ibn al-Ḥasshā', <i>Mufīd al-'Ulūm</i> , ed. Colin & Renaud, 1941
Jazzar	Ibn al-Jazzār, <i>Kitāb al-I'timād</i> , facsimile, 1985
Kutami	al-Kutāmī, commentary on Dioscurides, ed. Dietrich, 1988
Maimonides	Maimonides, <i>Sharḥ Asmā' al-'Uqqār</i> , ed. Meyerhof, 1940
Tadili	at-Tādīlī, <i>at-Tashawwuf</i> , ed. Faure, 1958
Tuhfa	Anon., <i>Tuhfat al-Aḥbāb</i> , ed. Renaud & Colin, 1934
Tunart	Ibn Tunart, <i>Kitāb al-Asmā'</i> , Leiden ms. Or. 23.333 (Lq) and Or. 23.348 (La)

<i>Abu Wezreg</i> , Ansab p. 29	<i>alezzaz</i> , Hassha no 600
<i>Abū Yenikef</i> , Tadili p. 218	<i>alili</i> , Kutami IV 72
<i>addad</i> , Baitar no 27	<i>alvun</i> , Tunart La 10r°
<i>aderyis</i> , Tunart Lq 23v°	<i>aman yesidan</i> , Bakri p. 156
<i>admam</i> , Kutami I 62	<i>amekraz</i> , Tunart Lq 20v°
<i>adrar</i> , Tunart 23r°	<i>ameliles</i> , Baitar no 5
<i>aḍar eylal</i> , Tunart La 14v°	<i>amezgur</i> , Abdun no 872
<i>aḍereylal</i> , Baitar no 2	<i>amrad</i> , Tuhfa no 204
<i>aḍil en wuṣṣen</i> , Tunart La 14v°	<i>anažel</i> , Tunart La 13r°
<i>adu en yilel</i> , Tunart La 15v°	<i>angaz en yeyef</i> , Tunart Lq 14r°
<i>aḍumazir</i> , Kutami IV 83	<i>anelkuḍ</i> , Tunart La 14v°
<i>aḍfersiw</i> , Tuhfa no 366	<i>angaref</i> , Tunart La 13r°
<i>agešru</i> , Baitar no 6	<i>anli</i> , Abdun no 219
<i>agettum</i> , Tunart La 13v°	<i>armas</i> , Abdun no 1802
<i>ayaz</i> , Tunart Lq 23r°	<i>argan</i> , Baitar no 56 (with <i>ḡim</i> )
<i>ak<sup>u</sup>tar</i> , Baitar no 3 (double initial <i>alif</i> )	<i>argan</i> , Baitar no 1145 (with <i>qaf</i> )
<i>ak<sup>u</sup>tar</i> , Kutami IV 91 (single initial <i>alif</i> )	<i>argan</i> , Tunart La 13r° (with <i>kaf</i> )
	<i>aryis</i> , Baitar no 4

- asasnu*, Kutami I 98  
*asγer yeγēzd*, Kutami III 91  
*asγersif*, Kutami I 73  
*aşγer yeşifer*, Baitar no 1604  
*aslili*, Kutami III 56  
*awserγint*, Kutami IV 7  
*ayeddid en waman*, Tunart Lq 16v°  
*ayerni*, Kutami II 149  
*Ayet Wersanen*, Ansab p. 44  
*azeğğig*, Tunart Lq 24v°  
*azenzu*, Tuhfa no 206  
*azeqqur*, Tunart La 13v°  
*azrud*, Baitar no 61  
*azuka*, Tunart Lq 23r°  
*Bā Weγγul*, Baidhaq p. 124  
*edduneyt*, Ansab p. 40  
*efsu*, Tunart La 11r°  
*elfeşset*, Tunart Lq 24v°  
*elneymun*, Baitar no 1655  
*ennes*, Tunart passim  
*eşşişeyt*, Tunart La 12v°  
*etterenž*, Abdun no 22  
*Guzāla*, Ansab p. 43  
*ibawen*, Abdun no 1982  
*ibn Wegadir*, Tadili p. 460  
*ibn Welwun*, Tadili p. 164  
*ibn Wemyar*, Ansab p. 29  
*ibn Wendelus*, Tadili p. 348  
*idgel*, Tunart Lq 23r°  
*Ifeštalen*, Ansab p. 45  
*iger en wesennan*, Baidhaq p. 78  
*iγrey*, Tunart Lq 23v°  
*ikiker*, Tunart La 14r°  
*imi en tegemmi*, Baidhaq p. 120  
*irden*, Tunart La 6v°  
*isidan*, Tunart Lq 11r°  
*izrey*, Kutami III 24  
*iżž*, Abdun no 1584  
*tabezzurγt en tili*, Kutami II 108  
*taferzizt*, Kutami IV 167  
*tafrut*, Jazzar p. 55  
*tafrut wuššen*, Kutami IV 20  
*tag"endest*, Jazzar p. 147  
*taγ"endest*, Abdun no 1599  
*taγeyγeyt*, Maimonides no 24  
*taγzūt en walud*, Baidhaq p. 93  
*takkewt*, Jazzar p. 149  
*talegg"it*, Abdun no 939  
*tamart en taγařt*, Kutami IV 134  
*tamemmařt*, Kutami I 58  
*tamert Wemsun*, Baitar no 2015  
*taneγit*, Jazzar p. 167  
*taneγut*, Jazzar p. 167  
*targa en wudī*, Bakri p. 59  
*taryal*, Abdun no 2673  
*tasafit*, Kutami I 75  
*tasliγwa*, Maimonides no 392  
*tasselt*, Kutami I 45  
*tašentit*, Tunart La f.6v°  
*tayda*, Kutami I 33  
*tazeğğasřt*, Tunart La 6r°  
*tazert*, Abdun no 327  
*terrehla*, Baitar no 413  
*teřtiwan*, Jazzar p. 97  
*tibi*, Tunart Lq 24v°  
*tibi en waman*, Abdun no 685  
*tibi en Meřer*, Tunart Lq 24v°  
*tibinřert*, Tuhfa no 413  
*tibitast*, Tunart La 15r°  
*tifaf*, Kutami II 113  
*tigirutan*, Jazzar p. 142  
*tikiđa*, Tunart La 13r°  
*tilett en yenerfeđ*, Abdun no 658  
*tilett tefiγra*, Abdun no 635  
*tilfaw*, Tunart Lq 25r°  
*tiqqi*, Tunart La 13r°



tisent en wezru, Tunart La 7r<sup>o</sup>  
 Tittawin, Baidhaq p. 93  
 tizext, Tunart Lq 23r<sup>o</sup>  
 tizurt, Tunart Lq 23r<sup>o</sup>  
 tululit, Kutami II 156  
 tunin en wegellid, Bakri p. 156  
 tunžifin, Tunart La 6v<sup>o</sup>  
 turufin, Tunart La 15r<sup>o</sup>  
 turza, Bakri p. 179  
 tuwedfa en yegran, Tunart La 25r<sup>o</sup>  
 udad, Tuhfa no 17  
 Uguzulen, Ansab p. 43

Uyzafen, Ansab p. 46  
 ukermuden, Tunart Lq 25r<sup>o</sup>  
 ukkan, Tunart La 14r<sup>o</sup>  
 ummad, Tunart Lq 23r<sup>o</sup>  
 wamsa, Tunart La 14r<sup>o</sup>  
 war ellay, Kutami IV 168  
 warellay, Tunart La 14v<sup>o</sup>  
 waylellu, Tunart La 14r<sup>o</sup>  
 xizzu, Tuhfa no 93  
 yeddex<sup>ten</sup>, Kutami IV 168  
 yeludi, Tunart La 14r<sup>o</sup>

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